

In the claimed light-emitting diode, the lattice mismatch of the AlGaInP type current diffusion layer is about -1% or less. Therefore, the AlGaInP type current diffusion layer has substantially the same resistivity as that of the conventional AlGaAs type current diffusion layer. Thus, operating voltage and power consumption of the resultant light-emitting diode are not increased. A high distortion density to make an optical property layer is prohibited, but a high light output efficiency from the light-emitting structure is obtained. Furthermore, the light-emitting diode of the present invention has high luminance and is highly reliable.

On the contrary, Hosoba discloses that "the current diffusion layer is lattice-matched with the substrate, whereby the semiconductor layers between the current diffusion layer and the substrate are allowed to have satisfactory crystallinity without any strain" (col. 12, lines 46-53).

Furthermore, it is well known in the art that lattice mismatching is undesirable, since it causes an increase in resistivity. Therefore, a person skilled in the art would have no impetus to use lattice mismatching of layers in order to decrease resistivity. It was in fact the inventors of the present invention who found the advantageous results of the claim elements and that lattice mismatch does not significantly effect resistivity of a bulk material (see page 19, lines 3-9 of the present specification, for example).

Therefore, since Hosoba teaches away from lattice-mismatch, pending independent claim 1 is novel and unobvious over Hosoba.

Independent Claims 11, 14 and 15

Claims 11, 14 and 15 also recite that the current diffusion layer is lattice-mismatched with the light-emitting structure. For the same reasons as discussed above

regarding claim 1, a person skilled in the art would not be motivated to use an AlGaInP diffusion layer with a lattice-mismatch from the light-emitting structure.

In view of the foregoing and other considerations, the Examiner has ample bases for withdrawing all rejections and for allowance of all pending claims. Accordingly, Applicants earnestly request a formal indication of allowance.

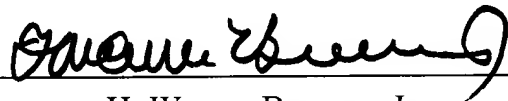
C. MISCELLANEOUS

The Commissioner is authorized to charge the undersigned's deposit account #14-1140 in whatever amount is necessary for entry of these papers and the continued pendency of the captioned application.

Should the Examiner feel that an interview with the undersigned would facilitate allowance of this application, the Examiner is encouraged to contact the undersigned.

Respectfully submitted,

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